

REMARKS

This Amendment with Request for Reconsideration is filed in response to a Non-Final Office Action of April 1 2009 in which claims 20-27 under consideration were rejected.

Claims 20 is amended, as submitted herein, to clarify the subject matter of claimed embodiments and in part to obviate the rejections of the Non- Final Office Action of April 11 2009, and new claims 32 and 33 are added. All amendments are fully supported by the specification: amendment in claim 20 is supported in Paragraph 0020 of the filed patent application, a new claim 32 is supported in Paragraphs 0018 and 0021 of the filed patent application, and a new claim 33 is supported in Paragraph 0023 of the filed patent application.

Moreover, the applicant submits a Declaration of Charles Allenden, an expert metallurgist in the field of art, which further reinforce arguments and amendment submitted herein.

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***Claim Rejections - 35 USC § 103***

**Examiner's Position:**

Claims 20-27 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/095082 (by Johns), GB 2355990 by Johns), or U.S. Patent 6,726,877 to Eccles (hereafter referred to as Eccles). Specifically, the Examiner states that WO 02/095082 discloses the same Ag alloy (page 1, lines 25-29 and page 11, lines 29-31). The Examiner further alleges that GB 2355990 discloses another claimed Ag alloy (page 2, lines 8-16 and page 4, lines 20-23). And, in addition, the Examiner alleges that Eccles discloses another claimed alloy (col. 1; line 27 and col 2, lines 55-65). The Examiner states that the prior art compounds bracket the Applicant's claimed compounds and that

obviousness typically exists when ranges of a claimed composition overlap the ranges disclosed in prior art.

**Applicant's Response:**

The Declaration of Charles Allenden, an expert metallurgist in the field of art, further reinforces arguments and amendment submitted herein. This declaration makes clear that the properties of the disclosed type of silver alloy (containing silver, copper and germanium) change significantly as the level of silver is raised between 93-94%, and also change significantly as the level of silver is raised between 95.5 and 96%. As shown in the Declaration, as the silver concentration is raised from 93% to 94% there is an abrupt decrease in copper elution, and an abrupt increase in thermal processing stability; and that as the silver concentration is raised from 95.5% to 96% there is an abrupt decrease in firestain resistance as disclosed in the present patent application. There are hence surprising and unexpected advantages that arise from using alloys of the composition specified in the present invention.

Moreover, it is further noted that use of alloys that have a silver concentration in the range between 93% and 95.5% is totally contrary to conventional practice, as alloys in this range have significantly more silver than is required for sterling silver, but have insufficient silver to qualify as Britannia silver.

Considering the present patent application, this has already highlighted the benefit of selecting a value of silver above 93.5% (in the context of a silver/copper/germanium alloy), in reducing or avoiding the formation and/or melting of the binary copper-germanium eutectic so as to provide reduced problems in heat treatment, providing greater inherent stability under thermal processing (**see paragraph 18 of the filed patent**

**application**). The present application has also highlighted the desirability of having a Cu/Ge ratio between 4:1 and 3:1 (see paragraph 0020 of the filed patent application), as recited in amended claim 20 of the present patent application.

Furthermore the present application has pointed out that surprisingly, if the silver is raised from 95.5% to 96% "it is difficult to avoid fire stain" (**see paragraph 0021 of the filed patent application**).

The evidence and explanations given in the Declaration, as submitted herein, reinforce and substantiate the significance of these concentrations of silver, which were already emphasized in the patent application. The Declaration also provides evidence of an additional advantage - suppression of copper elution - which is also provided by use of this type of alloy.

Therefore, the applicant is of opinion that none of the prior art references quoted by the Examiner, suggests or make obvious an alloy with the composition specified in embodiments of the present invention.

Furthermore, the Examiner's arguments in regard to the prior art quoted by the Examiner are analyzed based on MPEP guidelines which are stated in the MPEP Paragraph 2143 as follows:

"To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. ***In re Vaeck***, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

In reference to amended claim 20 of the present patent application, the reference WO 02/095082 (Johns), teaches that by annealing in a wet selectively oxidising atmosphere subsequent tarnishing and fire stain can be suppressed. Even though the description of WO 02/095082 (Johns) envisages a wide range of different silver concentrations between 30% and 98% (page 10 lines 15-16), the examples are provided for **92.7%** silver (alloy 1, alloy 2), with germanium about 1.1% and therefore copper about 6.2%; and **83.3%** silver (alloy 4), with germanium 1.5%, and therefore copper about 15.2%. It is therefore clear that the reference WO 02/095082 (Johns) is not in practice recommending any level of silver above 93%. It is certainly not suggesting that there would be any benefit in having a silver concentration above 93.5%. Nor is it suggesting that the Cu/Ge ratio should be between 3:1 and 4:1 - it does not suggest that this ratio is of any significance, and the values of this ratio are well above this range (5.6 for alloys 1 and 2, and 10.1 for alloy 4), whereas amended claim 20 in addition recites that "if said weight ratio of copper to germanium is above 4:1 a firestain resistance of said alloy abruptly decreases, and if said weight ratio of copper to germanium is below 3:1 a high germanium content abruptly increases formability problems of said alloy" which is not taught or even hinted by (WO 02/095082 (Johns).

In reference to amended claim 20 of the present patent application, the reference GB 2 355 990 (Johns) also relates to silver/copper/germanium alloys, and recommends that the silver content should be greater than 90% and most preferably greater than 92.5% (page 4 paragraph 4). That is the only explicit

teaching about silver content. The teaching is primarily concerned with the presence of other additives in the alloy. The recommended silver level would clearly encompass sterling silver, for which the silver level is typically 92.7% (to ensure that it complies with the 92.5% limitation). But there is certainly no suggestion that there would be any benefit in selecting a silver level above 93.5%. Nor is there any suggestion that the ratio of copper to germanium is of any significance, or that it should take the value specified by the present invention, whereas amended claim 20 in addition recites that "if said weight ratio of copper to germanium is above 4:1 a firestain resistance of said alloy abruptly decreases, and if said weight ratio of copper to germanium is below 3:1 a high germanium content abruptly increases formability problems of said alloy" which is not taught or even hinted by GB 2 355 990 (Johns).

Moreover, in reference to amended claim 20 of the present patent application, the reference of Eccles describes a range of different silver alloys, and is particularly concerned with "sterling silver alloy compositions of silver content at least 92.5%". Although the claims of Eccles envisage a considerably wider potential range of silver (e.g. 75% up to 99.2%, in claim 11), there is no explicit teaching of any level above 92.5%: the level of silver in all three of the alloys of Example 1 and in the alloy of Example 2 is 92.5%. There is therefore no suggestion that there would be any benefit in selecting a silver level above 93.5% (which is well above the limit for sterling silver), nor all that the upper limit should be 95.5%. Again, there is no any suggestion that the ratio of copper to germanium is of any significance, or that it should take the value specified by the present invention, whereas amended claim 20 in addition recites that "if said weight ratio of copper to

germanium is above 4:1 a firestain resistance of said alloy abruptly decreases, and if said weight ratio of copper to germanium is below 3:1 a high germanium content abruptly increases formability problems of said alloy" which is not taught or even hinted by Eccles.

Thus, although the prior art referenced by the Examiner, in its broadest terms, could be said to bracket the range specified by the present invention, it would not have been obvious to one of ordinary skill in the art to select the range specified by the present invention, in which the alloys have significantly different properties (see new claim 32) to those outside the specified range. These significantly different properties are highlighted in the Declaration; and (apart from copper elution) were also described in the original specification of the present patent application.

Furthermore, none of the references quoted by the examiner teach, suggest or even hint a limitation added in claim 20 : "if said weight ratio of copper to germanium is above 4:1 a firestain resistance of said alloy abruptly decreases, and if said weight ratio of copper to germanium is below 3:1 a high germanium content abruptly increases formability problems of said alloy", such that none of these references disclose all limitations of claim 20, as required by the MPEP Paragraph 2143 quoted herein.

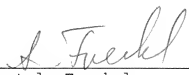
In light of the new limitation added in claim 20, the references quoted by the Examiner do not provide any motivation or suggestion (as required by the MPEP Paragraph 2143 quoted herein) in regard to the added subject matter, therefore a person skilled in the art would not be motivated to alter teachings of references quoted by the examiner to arrive at the subject matter of independent claim 20 and other dependent claims.

**CONCLUSION**

The objections and rejections of the Non-Final Office Action of April 1, 2009 having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested and passage of all claims to issue is earnestly solicited.

Respectfully submitted,  
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Attorneys and Agents for Applicants

Date: 8/31, 2009

  
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